Swasthavritta - 2.

Family Welfare Programme.

- National family welfare programme - 1951.

- objective of reducing birth rate to stabilize the population with the requirement of national economy.

⊗ **Demography** —

- Demography is scientific study of Human population.
- It mainly focuses on the study and observance of
  - i. change in population size.
  - ii. composition of the population.
  - iii. Distribution of population in Area.
- It also deals with five (05) "demographic process" which are continously influencing the size, composition and distribution of population.
  - i. Fertility
  - ii. Mortality — F 4M
  - iii. Marriage
  - iv. Social mobility,
  - v. Migration.

Demographic cycle —

- These are Five stage in demographic cycle -

1) **First stage** —

- High stationary stage.
- High birth rate and High death rate, where population is stationary.

— eg — India during 1920.

② second stage -

- Early expanding.
- Death rate begins to decline and birth rate remains same.
- Eg - Africa.

③ Third stage - [DR↓, BR↓].

- Late Expanding.
- Death rate decreases further along with decreasing birth rate
- Eg - India, China.

④ Fourth stage -

- Low stationary.
- Low birth rate and low death rate resulting in stationary → No change in quantity / condition.
- Eg. Denmark, Australia.

⑤ Fifth stage

- Declining stage.
- Population starts to decline because of lower birth rate than death rate.
- eg - Germany, Hungery.

Family Planning :-

- Family planning is the voluntary planning and action taken by individuals or couples to prevent, delay or acheive a pregnancy.

Objectives –

- To avoid unwanted births.
- To bring out wanted births.
- To regulate interval between pregnancies.
- To determine number of children in family.
- To control the time at which birth occurs in relation to age of the parents

Contraceptive methods –

- These are preventive method to avoid unwanted pregnancies

~~A Temporary –~~

~~1. Barrier Methods –~~

1. **Spacing methods –**
   - i. Natural method.
   - ii. Barriers method.
     - a. Physical barrier method
     - b. chemical barrier method.
     - c. IUD's
     - d. Hormonal methods.
     - e. Post - contraceptional method.

② Terminal Method –

A. Vasectomy.

B. Tubectomy.

① Spacing Methods –

– Temporary method.

– spacing of pregnancies and preventing unwanted child.

i] Natural method –

– Coitus interruptus / withdrawl method.

→ Penis is withdrawn from vagina before ejaculation.

– semen is prevented from entering the uterine cavity.

ii] Barrier Method –

– Methods which prevent meeting of sperms with ovum.

Ⓐ Physical Barrier Method –

Condom – Prevent entry of semen into vagina.

– Used by men. rolled over the erect penis before sex.

Diaphragm – Used by women in her vagina. to form barrier infront of cervix.

③ Third generation IUD's -
- contains hormone which slowly enters / released in uterus.
- Harmone affect lining of uterus and cervical mucus.

Ⓑ chemical Barrier method -
- these method usually kills sperms.
- This way chemical contraceptive help in preventing the pregnancy.
- chemical contraceptive used are.
→ Form of tablets : AROSOLS.
→ cream jelly.
→ suppositors.

Ⓒ Intra Uterine Devices (IUD's)
- Device which are placed in uterine cavity.
- Types of IUD's -

① First generation IUD's -
- made of polythene and are non-medicated.
- Available in diff. size and shape.

② second generation IUD's -
- made up of polyethylene but copper is added into these
- copper enhances conceptive effects.

Variety of copper devices -
- CuT, Cu7.
- Multi-load 375.
- Nova T.
- All copper devices are more effective and less enhance of side effects ie. pain and bleeding.

Ⓓ Hormonal Method -
- oral pills.
- Injectable contraceptive
- subdermal implants.
- Vaginal rings -

Ⓔ Post conceptional method -
- menstrual Regulation.
- menstrual induction.
- Abortion.

Ⓕ Termination Method -
- sterilisation is the only method which gives permanent protection from conception.

① Vasectomy -
- sterilisation of male.
- small portion of vasa deferences. (abt 1cm) on either side of scrotum is cut and ligated.

② Tubectomy -
- sterilisation of female
- cutting and scaling of fallopian tube.

MATERNAL AND CHILD HEALTH CARE.

- Maternal and child Health (MCH) care is one of main component declared at Alma Alta conference in 1978.
- MCH care services are free of charge.
- These services are available for women and children for preventive and curative causes.
- These services are provided by MOH, URWA, NGO's.

Aim of MCH care -

- Re-education of maternal, perinatal, infant and childhood mortality and morbidity.
- Promotion of physical & psychological development of child and adolescent family.
- Promotion of Reproductive Health.
- ~~Family planning services.~~
- ~~Post-Natal follow up.~~

Maternal Health

- provision of ante-natal care including regular examination immunization, proper nutrition and self care.
- Provision of safe delivery site.
- Post-Natal follow up.
- Family planning services.
- Health education.

Child Health

- Growth and development monitoring.
- Proper nutrition with breast feeding.
- Early discovery of congenital abnormilities.
- Immunization.
- Health education.

① Ante-natal care-

- It is the Health care given to pregnant women from first month pregnancy till the delivery time to ensure safe pregnancy and delivery.

Objectives-

- To assure that every wanted pregnancy culminates in the delivery of Healthy baby without impairing health of mother.
- To maintain health of mother and babies
- To detect abnormilities and complication at an early stage
- To educate the mother in physiology of pregnancy.

② Intra-natal / Natal care-

- It is the care given to women during labour and child birth
- Delivery site should be bygienic, well equipped and have qualified trained caretakers.
- care of women in labours.

③ Post-natal / Post-partal care-

→ It is the care given to mother after delivery.

Objectives-

- To ~~provide~~ prevent complications of post-natal period.
- To provide restoration of mother to optimum Health.
- To provide family planning services.
- To check the sufficiency of breastfeeding.
- To provide basic health education to mother and family.

⊛ Neo-natal care-

- It is health care given to infant in the first 4 weeks after delivery.

objectives-

- Maintains of cardiac and respiratory functions.
- Maintaince of body temperature.
- Avoidance of infection
- Early detection and treatment of congenital disorders.

⊛ Child Health Problems-

① Low birth weight-

- Low birth weight has been defined as birthweight of less than 2.5kg. (< 2.5kg)
- measurements being taken prefarably within the first hour of life

② Malnutrion -

- most widespread condition affecting the health of children.
- Malnutrition makes the child more susceptible to infections.
- Recovery is slower and mortality is high.
- 65% of children in India

③ Infections and Parasitosis —

- Diarrhoea, RTI, measles, Pertussis, Polio, Neonatal tetanus, TB and Diptheria are the leading childhood disease.

④ Accidents and Poisoning —

Burns, trauma, Drowning, traffic accidents, poisoning as a result of Home accidents.

⑤ Behavioral Problems —

- Behavioral problems are notable child related issues which are increasing and recognised in most countries.

⑥ Indicators of MCH —

1. Maternal mortality rate —

- Total number of female death due to complication of pregnancy, child birth or within 42 days of delivery.

2. Mortality in infancy and childhood.

Preventative Geriatrics.

Defination –

– Preventative Geriatrics is the art and science of preventing disease or complications in geriatric population and promoting their health and efficiency.

Problems of Geriatric population –

1. Visual impairement – Cataract.

2. Skeletal disorders – Degenerative changes.
   Arthritis
   Spondylosis etc.

3. Neurological Problems – Reduced memory
   Reduction in nerve conduction.

4. Cardiovascular problems – Arrythmia
   Hypertension.
   Thickening of blood vessels.

5. GIT problems – Constipation, Indigestion.
   – Decreased Appetite.
   Difficulty in chewing.
   Dry mouth.

6. Respiratory Problems – Asthma
   Bronchitis.
   Decresed gas exchange.

7. Auditory Problems — loss of hearing,
Hearing with difficulty.

8. Mental Problems — Reduced memory
confusion,
Forgetfulness, Fearfulness.

9. social problems — Stress, Loneliness
Dependency,
Isolation, Abuse

⑧ Prevention —

1. Primordial Prevention — દિનચર્યા, ઋતુચર્યા, સદ્વૃત્ત પાલન
— હિતકર આહાર - વિહાર સેવન
— રસાયન સેવન.

2. Primary Prevention — Health Education and exercise
— ઋતુનુસાર શોધન.

3. secondary Prevention — Check weight, stress, blood sugar,
and blood pressure;
— Early Detection of complication
and treatment
— પંચકર્મ — વસ્તિકર્મ, અભ્યંગ, સ્વેદન,
રસાયન સેવન
— Dietary supplements.

4. Tertiary Prevention — counseling.
Rehabilitation.
Welfare Activities.

WORLD HEALTH ORGANISATION (WHO).

- World Health organisation (WHO) is specialised, non-political health agency of United Nation with headquarters at Geneva.

Onset - April 1945, San Francisco.
Formal Existence 7th April 1948.
Every year, 7th April is celebrated as World Health Day.

Objectives -
- The attainment by all people of the Highest level of Health.
- Health for all 2000 A.D. / HFA 2000.

Principle -
- Health is state of complete physical, mental and social well being and not merely the absence of disease.
-
- Healthy development of children is of basic importance.
-
- Governments have responsibility for the health of their.
- Eligibility for membership is open for all countries
- Highest attainable standard of health by all without differentiation of race, religion, political belief, economic and social condition.

classmate
Date
Page

② Structure -

i. The World Health Assembly -
- It is the Health parliament and supreme governing body of WHO.
- It meets annually in May at general headquarters at Geneva.

Function - 1. Determine International Health policy.
2. Review work of past year.
3. Approve the budget of for following year.

ii. The Executive Board -
- 32 members, 1/3 of members are replaced each year.
- It meets twice in year, generally in January.

Function - Review of decisions and policies.
Decisions of emergency like epidemics; earthquake

iii. The seeretariale
- Director general is the Head and cheif technical and administrative ~~officer of WHO~~. officer of WHO.
- Provision of technical and managerial support for member states.

② Functions - cooperation with other organisations and agencies.
- Prevention and control of specific disease.
- Development of comphresive health services.
- Family Health improvement.
- Enviornmental Health monitoring and protection.
- Health statistics along with update.
- support in bio-medical research.
- Publication of Health literature and information.

School Health services.

- School health is important branch of community Health.
- School health services can be considered as continuation of MCH services.

Objectives of school Health services -

- Promotion of positive Health.
- Prevention of disease.
- Early diagnosis, treatment and follow up defects.
- Increasing health awareness in children,
- Health education.
- Provision of Healthy environment

② Component of school Health programme -

1. Health Education.
2. Health Enviornment
3. Health services

1. Health Education -

- The objectives of health education is to bring about hygiene and Health aspects to promote effective healthy life.

some areas included under educations are -

- Personal Hygiene.
- Prevention of disease
- First Aid.
- safety education.
- Nutritional education.
- Physical Health.
- Mental Health.
- Improvement of environmental sanitation.
- Adult Health education. - Family life education

2. Healthy Enviornment—

- The school children spends lot of their time school, Therefore, the enviornment of school must be healthy from both inside and outside, so that children remain healthy; physically, mentally, socially, emotionally and culturally.

The elements of healthy school enviornments—

- school building with play ground and clean sanitation.
- Healthful teaching.
- Mid-day meal.
- Physical education procedures.
- Good relation b/w teachers and students.
- Good relations among and among teachers.

3. Health services—

Duties of school medical officers—

- The principle objective of school medical officers is early detection and treatment of defects in children.

Other Duties include—

- To guide about the site of school building, ventilation, lighting, hygienic cleaniness and sanitation.
- Regular inspection of school building, its venttilation. Hygienic cleaniness and sanitation.
- Medical checkup of school children and keep their medical records; Height, weight, nutrition, vision, hearing, dental condition and immunization.
- To arrange for periodic immunization of childrens
- To organise preventive and supportive measures in case of epidemic
- To guide teachers about importance of hygiene and first Aid training
- Isolation & quartine of children suffering from contagious disorder

(x) school building —

1. Location.
2. classrooms.
3. school arrangement.
4. maintainance of Healthy environment
5. water supply.
6. Lattines and Urinals.
7. Midi-day meal.

Disaster Management-

Defination-

WHO defines disaster as " any occurance that causes damage, ecological disruption, loss of human life and deterioration of health and health services.

Classification of Disaster-

A] Based on causes -

i. Natural

ii. Man-made

B] Based on on-set

i. Sudden

ii. Slow

① **Natural Disaster-**

- Disaster occurs naturally by geological, seismic, hydrological, meteorological or any kind of environment derangement

A] **Meteorological Disaster** - Floods, Earthquake, landslides, volcanic eruption, cyclone, tsunami, Tidal waves, Heat waves.

B] **Biological Disaster** - Epidemic, pandemic etc.

② **Man-made Disaster-**

- Disaster which caused by human activities, accidental or intentional.

Eg- Warfare, civil strike, conflicts, Airplane crash, Epidemic, Terrorism etc.

(1) sudden onset--

- Disaster occur with little / no warning.
- minimal time to prepare.

eg- Earthquake, Tsunami, cyclone, Volcanic disruption etc.

(2) slow onset--

- Disaster develop slowly,
- First the situation develops, the second level is an emergency, third level is disaster.
- eg- Drought, civil strike, epidemic etc.

(3) Phase of Disaster Management--

① Mitigation-

- Minimizing the effects of disaster.
- Ex- Building codes and zoning.
  Vulnerability analysis.
  Public education.

② Preparedness -

- Planning how to response
- Ex- Preparedness plans
  Emergency exercise / training.
  Warning systems

③ Response-

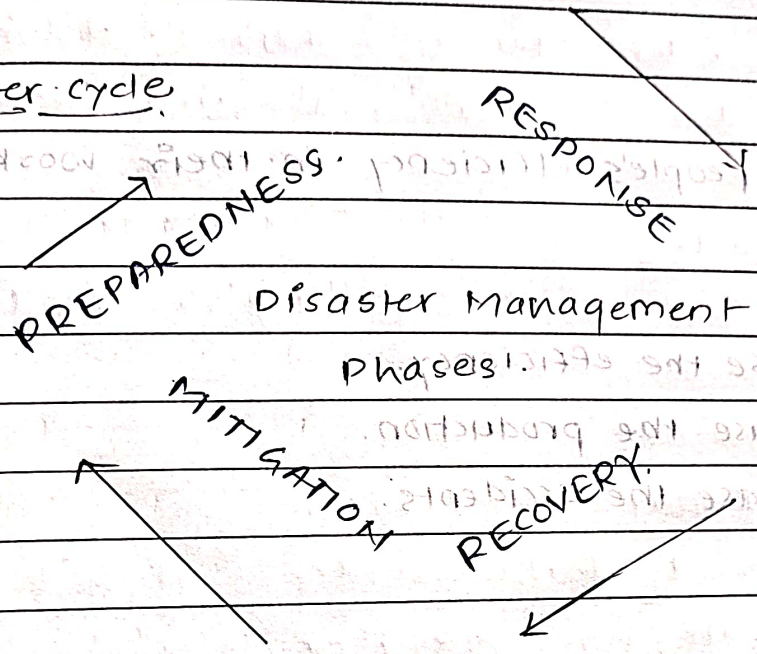
- Efforts to minimize the hazards created by a disaster.
- Ex- Search and Rescue.
  Emergency relief.

Recovery –

+ Returning the community to normal.

++ Ex – Temporary Housing.
medical care.

Disaster cycle



Occupational Health.

Defination of occupational Health-

- The common defination of occupational health is branch of medicine dealing with prevention and treatment of job related injuries and illness.

Ergonomics-

- study of people's efficiency in their working enviornment

Aim-

1. To increase the efficiency.
2. To increase the production.
3. To decrease the accidents.

objectives-

- To promote health of workers.
- To maintain highest degree of physical, mental and social well being of workers.
- To prevent the disease by elimination of factors which are inimical to their health. (Harmful).

Man and Physical, chemical and Biological Agents-

Physical — The physical factors in the working environment which may be adverse to health are-
- Heat, cold, humidity, air, movement, heat radiation, light, vibrations, ionizing radiations etc.

chemical — This include large number of chemicals, toxic dust and gases which are hazardous to health of worker.

Biological — workers may come in contact with viral, rickettsial, bacterial and parasitic agent, due to close with animals, contaminated food, soil.

Occupational Hazards –

- An industrial worker is exposed to the following five types of hazards (Physical, chemical, biological, mechanical and psychological hazards) depending upon the nature of occupation.

① **Physical Hazards –**

a. **Heat** – Heat hyperpyrexia, heat exhaustion, heat syncope, heat cramps, burns and local effects such as prickly heat

b. **Cold** – Trench foot, Frost bite, chilblains.

c. **Light** – occupational cataract, miner's nystagmus

d. **Pressure** – Caisson disease, air embolism, blast (Explosion).

e. **Noise** – occupation deafness

f **Radiation** – cancer, leukamia, panaytopenia.

g. **Mechanical factors** – Injuries, Accidents.

h. **Electricity** – Burns

② **Chemical Hazards / disease –**

a. **Gases** – CO_2, CO, HCN, CS_2, NH_3, N_2, H_2S, SO_2, HCl. – causes gas poisoning

b. **Dust**

① Inorganic Dusts –	② organic dusts –
– coal Dust – Anthracosis.	– cancer fiber. – Bagassosis
– silica – silicosis.	cotton dust – Byssinosis.
– Iron – siderosis.	Tobacco – Tobaccosis

(III) Metal and their compounds –
– Toxic hazards from lead, mercury, cadmium, magnese, beryllium, arsenic, chromium etc.

(IV) Chemicals – Acids, Alkalies, pesticides.

(V) Solvents – carbon bisulphide, benzene, chloroform etc.

(3) Biological Agent (Hazards) –
– Brucellosis, lepto spirosis, anthrax, tetanus, encephalitis, fungal infection etc. Rabies, plague, malignant oedema.

(4) Mechanical Hazards –
– 10% of accidents in the industry are due to mechanical causes.

(5) Psychological Hazards –
– These are due to failure of the worker to develop healthy relationship with, his co-workers, employes, management supervisor's.
– Hostility, aggresiveness, anxiety, depression, frustation, alcohilism, drug addiction, sickness absenteeism
– Neurosis, fatigue, Peptic ulcer, HTN, asthma etc.

(*) Prevention of occupational Hazards –
– It can be prevented by 3 levels – Medical, Engineering, legislation

Medical Level	Engineering level	Legislation and Acts.
– Prior placement exam – Periodical checkup / exam – Medical and health care facilities. – Notification and record maintainance. – Supervision of work environment. – Health education and counselling.	– Design of building. – Hygienic measures. – Good house keeping – General ventilation – Isolation of some risky operations. / environment mountoring. – Dust control by water spray, – Mechanization to prevent contact with harmful substance / protective devices – mask, shield	– worker is more important than machine which he operate – The worker cannot be permitted to endanger his life and limb in occupation – Factory laws, therefore have been framed in every country to govern the conditions in industry and to safeguard health and welfare of worker.

Primary Health care.

⊙ Defination -

- Primary Health care (PHC) is an essential health care made universally accessible and acceptable to individual through their full participation and at a cost the community and country can afford.

⊙ Principles of PHC -

1. Equitable Distribution -
   - Irrespective of people, health care should be distributed equally.

2. community Participation -
   - Involvement of government, individual, families and communities in implementing health care services.

3. Inter-sectoral coordination -
   - co-ordination of health sector such as agriculture, housing, public workers etc.

4. Appropriate technology -
   - Usage of cheaper, scientifically valid and acceptable techniques.

⊙ Elements of PHC -

- Education, prevention and control of health problems.
- Promotion of food supply and proper nutrition.
- Adequate supply of safe water and basic sanitation.
- MCH and Family planning.
- Immunization against major infectious agents / diseases
- Provision of essential drugs.
- Appropriate treatment of common disease and injury.
- Prevention and control of local endemic diseases.

⑧ Levels of Health care –

i] Village level –
- Village Health Guide schemes.
- Health Guide is person with aptitude for social service and is not a full time government functionary.

* Training of local dias –
- Under the rural health scheme, local dais is trained to conduct delivery.

* ICDS scheme / Anganwadi Worker –
- There is an Anganwadi worker for a population of 1000.
- An Anganwadi worker undergoes training in various aspect of Health, nutrition and child development

* ASHA – Accredited social Health Activist
- ASHA must be resident of village, female, preferable in age group of 25-45 years. with normal education upto 8th standard, having communication skill and leardership qualities.

ii] sub-center level – (उपकेंद्र).
- one sub-center is established for every 5000 population in the planes and one for every 3000 population in hilly, tribal and backward area.

iii] Primary Health center (PHC) Level –
- PHC is the center which provides curative, preventive and promotive aspect of health.
- One PHC is established for every 30000 rural population in planes and one for every 20,000 population in hilly, tribal area

iv) Community Health center (CHC) level :-

- Each CHC is covering population of 80,000 to 1.2 lakh with 30 beds and specialist in surgery, medicine, obstetrics and gynecology, pediatrics, with x-ray and laboratory.

Primary Health center.

- The centre which provide integrated curative, preventive and promotive aspect of health is known as primary health center.
- one primary center for every 30000 rural population in planes and one PHC for every 20000 population in hilly, tribal and backward area.
- There are about 25000 PHC's functioning in the country as on March 2005.

Objectives of Primary Health center:-

1. To provide comprehensive primary health care to the community through the primary health centers.

2. To achieve and maintain an acceptable standard of quality of care

3. To make the services more responsive and sensitive to the needs of community.

Functions of Primary Health center-

1. Medical care - OPD services, 24 - emergency services, referral services and In patient services (IPD)

2. MCH including family planning - antenatal care, intra-natal care, post-natal care, new born care etc

3. Medical termination of pregnancy using manual vaccum aspiration technique.

4. Safe water supply and basic sanitation.

5. School Health services.

6. Adolscent Health care.

7. Prevention and control of locally epidemics disease.

8. Collecting and reporting of vital stastics.

9. Education about Health.

10. National Health programme.

11. Training of health guide, health worker, local dais and health assistants.

12. Basic laboratory services.

13. selected surgical procedures.

CONCEPT OF PREVENTION.

successful prevention depends upon-
- knowledge of causation.
- Dynamics of transmission.
- identification of risk factors and risk groups.
- Availability of prophylactic
- Early detection and treatment measures.
- An organisation for applying these measure to appropriate persons or groups.

- The concept of prevention described in context of level.

① Primordial Prevention-
- Primordial prevention consist of action and measures that inhibit the emergence of risk factors in the form of environmental, economic, social and behavioral conditions and cultural pattern of living.
- It is the prevention of the emergence or development of risk factors in countries or population groups in which they have not yet appeared.
- In this prevention; efforts are directed towards discouraging children from adopting harmful lifestyle
- The main intervention in primordial prevention is through individual and mass education.
- for ex - Many adult health problems (eg. obesity, Hypertension) have their early origins in childhood because this time when lifestyle formed

2. Primary Prevention —

- It can be defined as the action taken prior to onset of disease, which removes possibilities that the disease will ever occur.

- It signifies in the pre-pathogenesis phase of disease or health problem.

- Primary prevention may be accomplished by measures of "Health Promotion" and "specific protection".

Approaches for Primary Prevention —

- WHO recommended the following approaches for the primary prevention of chronic disease.

i. Population (mass) strategy.

ii. High Risk strategy.

3. Secondary Prevention —

- Secondary prevention is defined as action which stops the progress of disease ; as its beginning stage and prevents complications.

- Specific interventions are early diagnosis and adequate treatment

- Secondary prevention attempt to arrest the process of disease, restore health, treating the disease before irreversible pathological changes, and reverse communicability of infectious disease

- Prevent other community from acquiring the infection

4. Tertiary Disease -

- Tertiary stage is used when disease process has reached at advanced level beyond its early stage.

- It is the use of all the measures available to reduce disabilities and promote the patient to pre-remediate condition.

- Intervention includes are - Disability limitation.
  Rehabilitation.

Epidemiology –

Defination –

- It is the study of relationship among various factors and condition in the agent, host and enviornment that determine frequency of occurance and distribution of an infectious process.

- study of incidence in human society of any morbid state.

Epidemiological Triad –

- Causative factor of disease may be classified as –
  - Agent
  - Host
  - Enviorment

- these three factors are referred as epidemiological Triad.

- Disease will develop only after interaction b/w these three factors

① Agent factor –

- Pathogenic agent is defined as substance, living / nonliving which may initial process of disease.

Classification of Agent –

1. Biological agent
2. Nutrient agent
3. Physical
4. chemical.
5. Meehanical
6. social.

② Host factor –

- A person / animal / bird / arthropod that offers lodgment to an infectious agent under natural condition.

③ Enviornmental factor –

A. Physical enviornment –
- Non-living objects.
- Air, water, soil, heat, light

b. Biological enviornment –
- microbial agent, insects, animal, plants, man

c. Psychosocial enviorment –
- Lifestyle, poverty, urbanizath community life

MODES OF TRANSMISSION OF DISEASE:

- Mode of transmission of disease are of (02) type -
  1. Direct transmission.
  2. Indirect transmission.

1) Direct transmission -
   a. Direct contact
   b. Droplet infection.
   c. contact with soil.
   d. Inoculation into skin / mucosa
   e. Trans placental.

(A) Direct contact:
- Infection may be transmitted by direct contact from skin to skin, mucosa to macous to skin of same / other person
eg. Touching, kissing, sexual intercourse (STD, AIDS, Leprosy, skin).

(B) Droplet infection -
- Direct projection of spray of droplet, saliva and naso-pharyngeal secretion during coughing, sneezing, speaking and spitting into surroundings.
eg - RTI
Fever
common cold.
TB.

(C) contact with soil -
- The disease agent is acquired by direct exposure of susceptible tissue from soil, compost, decaying vegetable matter.
eg - Hookworm
Tetanus.

(D) Inoculation into skin / mucosa -
- The disease agent is inoculated directly into skin or mucosa.
eg. - Rabies virus by dog bite
Hepatitis B

(E) Trans placental -
- The disease agent is transfered from mother to foetus through placental.
eg - TORCH agents.

2) Indirect transmission -
   a. Vehicle borne.
   b. Vector borne
   c. Air borne
   d. Fomite borne
   e. Unclean hands and fingers.

① Vehicle borne :-

- Infection spread through vehicle like water, food, ice, blood, serum, plasma

eg. - Typhoid fever
cholera
polio
Hepatitis A.

② Vector borne :-

- Arthropod or any living carries is the infection organism

eg - Malaria
Dengue

③ Air borne :-

- Tiny particle spread through air.

eg - TB
pneumonia
Q fever

④ Fomite borne :-

- Fomites are non-living substance other than food / water
- They are contaminated & infection and transfer infection from infectious agent to healthy person.

eg. clothes
Towels.
cup, spoons.
Handkerchief.

⑤ Unclean hands and fing

- most common medium which pathogenic agents are tranferred to food fro the skin, nose, bowel.

eg - staphylococcal.

④ Disinfection –

– Process of elimination of most pathogenic micro-organisms on inanimate objects
– Disinfection can be achieved by physical and chemical method.
– chemical used in disinfection are called disinfectants.
– Different disinfectants have different target range.

Mainly disinfection is divided into (03) types –

① Pre-current disinfection –
– Chlorination of water
– Pasteurization of milk.
– Moping of floor with disinfectants

② concurrent disinfection –
– Done when person is ill, prevent the spread of infection.
– Disinfecting the utensils, clothes stool, sputum, urine, floor, etc belonging to infective person.

③ Terminal disinfection –
– Done after death, recovery, removal of (pt) from ward.
– Purpose is to disinfect the room, clothes, beddings.

④ Other method of sterilization or disinfection –

- physical
  - → sunlight
  - → Heat
    - Dry
    - Moist
  - → vibration.
  - → Radiation
    - Ionizing
    - Non ionizing
  - → Filtration
    - → Earthenware
    - → Asbestos
    - → sintered glass
    - → membrane.
- Chemical
  - Liquid
    - Alcohol
    - Aldehyde
    - phenols
    - Halogen
    - Heavy metal
    - Dyes
  - gaseous
    - formaldehyde
    - Ethylene oxide.
- physico-chemical.
  - plasma

જનપદોધ્વંસ

– જે વ્યાધી એકાચ વેળી અનેક વ્યક્તી સમુહ કિંવા જનપદાલા ગ્રસિત કરુન त्यांचा उध्वंस करतात त्यांना जानपदिक (epidemic) असे म्हणतात.

हेतु – (कारणे) –

– विभिन्न प्रकृति, आहार, देह, बल, सात्म्य, सत्व तसेच आयु असणाऱ्या व्यक्ती जनोपदध्वंसामुळे कश्या ग्रस्त होतात याचे वर्णन आढळते.

– वायु, उदक, देश, काल ही जनपदोध्वंसाची चार सामान्य कारणे असुन हे आव दुषित झाल्यास त्यांचे निवारण करणे उत्तरोत्तर कठीण असते.

1. वायु
2. उदक
3. देश
4. काल

① दुषित वायु –

– वस्तुनुसार नसणारा वायु.

– जोरणे वाहणारा, घोंघुन वाहणारा, अत्यंत शित, अत्यंत उष्ण, अत्यंत कोरडा, दमट वातावरणातील वायु आरोग्याकरिता अहितकर असतो.

– औद्योगिक संस्थाने व रस्त्यावरील वाहने ही वायुचे प्रदुषण करतात.

② दुषित जल –

– विकृत गंध, स्पर्श, वर्ण युक्त जल

– ज्या पाण्यात जलचर प्राणी राहत नाहीत.

– जे पाणी पशु, पक्षी पित नाहीत.

– ज्या जलशयातील पाणी खुपच दुषित झाले आहे असे जल दुषित असते.

– कारखान्यातुन निघणारे, मलमुत्रामुळे दुषित झाले जल नदीमध्ये सोडल्यास जलदुष्टी होते.

③ दुषित देश –

– ज्या देशाचा प्राकृतिक रंग, गंध, चव आणि स्पर्श बदलुन तेथे अधिक ओलावा निर्माण झालेला आहे.

– ज्या देशात हिंस्र श्वापदे अधिक आहेत.

– शेतीतील पिके आपोआप नष्ट झाली आहेत

– ज्या किटाणु वेली, गवत, झुडपे अधिक आहेत.

– तेथिल लोकांनी सत्य, धर्म, प्रज्ञा शिल, सदाचार सोडला आहे.

असा देश दुषित असतो.

④ दुषित काल –

– वस्तुविपरित लक्षणे म्हणजे पावसाळ्या मध्ये ऊन, उन्हाळ्यात थंडी

– अधिक प्रमाणात उन्हाळा, हिवाळा, पावसाळा.

– थंडी, ऊन, पाऊस अनियमित नसणे.

અનિયત આતંક :- પ્રાયહેતુ -

① અધર્મ :- કર્તવ્યાચે પાલન ન કરણે.

② શાસ્વપ્રભવ - ક્રોધ, મોહ, લોભ, મત્સર, મોહ, અહંકાર इ. प्राबल्य होऊन मनुष्य अधर्मपूर्वक दुसऱ्यावर आक्रमण करतो.

③ रक्षोगण - भूत प्रेत, हिंसक प्राणी, रोगोत्पादक जिवाणु म्हणजे रक्षोगण,

④ अग्निशाप - गुरु, सिद्ध व्यक्ती, वृद्ध यांच्या सूचनाचे पालन न करणे.

⑤ जनपदोध्वंसाच्या नियंत्रणाकरिता उपाय - (०२) प्रकारचे उपाय सांगितले आहेत.

(अ) प्रतिषेधात्मक - उध्वंसक हेतुचे परिणाम होऊ नये यासाठी प्रयत्न करणे.

(ब) व्याधिनियंत्रण - - व्याधि निर्माण झाल्यावर त्यानुसार नियंत्रणाची उपाययोजना करणे.

प्रतिषेधात्मक उपाय पुढीलप्रमाणे -

① उध्वंसक हेतुची निर्मिती होण्यापुर्वी औषधी, अन्नधान्य यांचा संग्रह करणे. वस्तु अधिकृत असताना याचा संचय केल्यास त्या अदूषित असतात.

② अधर्म आचरणाला दंड घालणे

③ रसायन वा पंचकर्म - - पंचकर्मद्वारे शरीराचे शोधन करून रसायन औषधी सेवन करण्यास सांगणे

④ भूमि, अन्न, जल, पर्यावरण यांचे प्रदूषण होणार नाही याची उपाययोजना करणे.

⑤ सद्वृत्त पालन, सत्यभाषण, प्राणिमात्रांवर दया करणे, देवपूजा, दान, ब्रह्मचर्य पालन यामुळे सात्विक गुण वाढून प्रज्ञापराध होत नाहीत.

⑥ रक्षोगण :- - सूक्ष्म कृमीमुळे होणाऱ्या उध्वंसाकरिता उपाय योजना करणे.

Bio-medical Waste

- BMW means any waste which is generated during the diagnosis, treatment or immunization of human beings or animals.

Category 1 → Human anatomical Waste.
Category 2 → Animal Waste
Category 3 → microbiology & biotechnology Waste.
Category 4 → Waste, sharps.
Category 5 → Discarded medicine & Cytotoxic drugs
Category 6 → Solid Waste
Category 7 → Solid Waste.
Category 8 → liquid Waste.
Category 9 → Incineration ash.
Category 10 → Chemical used in protection of biological, chemical used in disinfection.

- Sources of BMW

1. Govt Hospital
2. private Hospital
3. Nursing Home
4. physician clinic
5. Dentist Clinic
6. Dispensaries.
7. PHC
8. Mortuaries
9. medical research center
10. laboratories.

Health Hazards of Health Care Waste.

1. Contain Infectious agent
2. Contain sharps
3. genotoxic
4. radio active

The main group at risk are:-

1. medical doctors, nurses, Health Care auxillaries
2. patient in health Care Establishment.
3. Visitors in Health Care establisment.

1. Hazards from Waste and Sharps
2. Hazards from pharmaceutical & chemical Waste.
3. Hazards from genotoxic Waste.
4. Hazard from radioactive Waste.
5. public sensitivity.

TREATMENT & Disposal Technological

① Incineration :- It is a

High temperature dry oxidation process that reduces organic and combustible waste to inorganic incombustible matter.

Types of incinerators

① Double Chamber pyrolytic
② single chamber furnaces
③ rotatory kins.

② Chemical Disinfection :->
- chemicals are added to waste to kill or inactive the pathogen results in disinfection rather than sterilization.

③ Wet and dry thermal treatment.

④ microwave radiation.

⑤ land disposal

Purification of Water.

Purification of water.

- Large scale
  - storage
    - Physical
    - chemical
    - Biological
  - Filtration
    - slow land filter
    - Rapid land filter
  - Disinfection
    - chlorin^n
    - ozon^n
    - UV Rad^n
- Small scale
  - Boiling
  - chemical
  - Filtrat^n

① Large scale purification of water

Ⓐ storage

- Natural purification.

Ⓑ Physical purification -

- Quality of water improves.
- 90% of impurities settle down

Ⓒ chemical purification -

- Reduces content of free ammonia and rises nitrates

Ⓓ Biological purification -

- Pathogenic organism dies out optimum period of storage - 10-14 days

② Filtration -

- 98-99% bacteria removed.

ⓐ slow sand filter - Biological

ⓑ Rapid sand filter - Mechanical

ⓐ slow sand filter -

1. components -
   1. supernant raw water.
   2. Bed of sand.
   3. Under drainage system
   4. Filter control valves.

ⓑ Rapid sand filter -

Water treated c̄ Alum.

↓

Mixing chamber

↓

Floculation chamber (stirring of Alum).

↓

sedimentation Tank (for 2-6hrs)

↓

Filtration Unit

↓

Purified water storage.

③ Disinfection -

- chemical purification of water

ⓐ Chlorination -

- Pathogenic bacteria are killed by chlorine excluding spores and virus

Types - Chlorine gas
- Chloramine
- Perchloron

ⓑ Ozonation -

- Unstable gas
- powerful oxidising agent
- Eliminates undesirable odour, taste and color

ⓒ UV Radiation -

- Expensive treatment

④ Purification on small scale -

ⓐ Boiling -

- Rolling boiling for 5-10 min kill bacteria, spores, cysts, ova. and gives sterilised water. and removes temporary hardness

ⓑ chemical disinfection -

- Bleaching powder
- Cl_2 soln
- Cl_2 tablets
- Iodine
- Potassium permanganate
- HTH.

ⓒ Filtration -

- Pasteur chamber (porcelain candle) and filter
- Bekefeld filter. (made of infusorial earth)

NATIONAL HEALTH PROGRAMME

National Leprosy Eradication Programme, (NLEP).

Leprosy –

- It is a Air borne disease.
- caused by Mycobacterium leprae.

Key points –

① **1955** – Launched As National leprosy control programme.

Aim – To achieve control of leprasy through early detection of cases and DDS (Dapsone) mono-therapy on the ambulatory basis.

② **1983** – Control programme was re-designed as "National Leprosy Eradication Programme".

Aim – The main goal of this programme was eradication of disease by turn of century.

- Reduce case load to = 1 or <1 per 10000 populations

③ **1983** – The First World bank supported to this project.

④ **2001-02** – On the completion of this project, The 2nd Phase project with World Bank supporters started, which ended in 2004.

⑤ **2005** – India achieved elimination of leprosy. (i.e. 1 or <1 case per 10000 population)

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(x) Component of programme are as follows -

1. Decentralised integrated leprosy services through general health care system.
2. Capacity building of all general health services and functionaries
3. Intensified information, education and communication. (IEC).
4. Prevention of disability and medical rehabilitation.
5. Intensified monitoring and supervision.

(x) Major Activities under NLEP -

① Active new case finding, incentive based work.

② MCR (Micro cellular Rubber) footware is provided to patient

③ Dressing material, supportive medicine, ulcer kits provided

④ Rs. 5000 incentive to affected person.

⑤ Incentive to AASHA workers.

(x) Target of NLEP -

① Prevalence rate: < 1 case for 10000.

② Annual (rate): New case detection rate. < 10 / 1,00,000

③ Cure rate among → M.B. leprosy > 95% (greater than)

→ P.B. Leprosy > 97% (greater than).

④ Grade II disability reduced.

⑤ stigma reduced.

Need for change and Rationale for intervention –

– Even though number of leprosy cases detected has been decreasing in the state, child cases, deformities and M.B. cases were above national average.

④ ASWAMEDHAM – introduced in Oct 2016.

– objectives under sustainable development goal leprosy 2030.

⑤ LCDC – Leprosy case detection campaign.

⑥ During 2020-21 – 3 Anti-leprosy programme Launched

1. ACD and RS – Active case detection and Regular survivellance.

2.

2. ELSA – Eradication of leprosy through self reporting and Awareness.

3. SLAC – Sparsh leprosy Awareness campaign.

National AIDS control Programme [NACP]:

AIDS -

- Acquired Immuno deficiency syndrome.
- caused by HIV (Human Immuno Deficiency Virus).
- HIV is RNA (Retrovirus). It attacks on CD4 cells.
- 1st case in In India, was detected in (1986) Chennai.

- National AIDS control programme was launched in India in the year - 1987.
- 1992 - NACO - (National AIDS control organisation) established

Aim -

- Prevent further transmission of HIV.
- Decreased morbidity and mortality associated with HIV infection.
- Minimize the social economic impact resulting from HIV infection.

Phase of NACP -

Phase I	— 1992 to 1999.
Phase II	— 1999 to 2006
Phase III	— 2007 - 2012
Phase IV	— 2012 to 2017
Phase IV (extension)	— 2017 to 2021.
Phase V	— 2021 to 2026.

- Also called National strategic plan

* Phase - I -

- Objectives - 1. To slow the spread of HIV
2. To reduce future morbidity and mortality.
3. Reduce impact of AIDS by initiating a major effort in the prevention of HIV transmission.

② Phase - II

Aim - Reducing spread of HIV infection in India
- strengthens India's capacity to respond to HIV epidemic on long term basis.

③ Phase III -

Goal - Halting and Reversing the HIV/AIDS epidemic over next 5 years through integration of prevention and care, support and treatment program

④ Preventive services are -

1. Promoting condom use
2. STI services.
3. Needle / syringes and substition.
4. NGO's Network
5. Testing services to pregnant woman (ANC service)

UNIVERSAL IMMUNISATION PROGRAMME.

1974 — Launched.

- To protect children against six vaccine - preventable diseases including -
  1. Diphtheria
  2. Tetanus
  3. Polio
  4. Whooping cough.
  5. Tuberculosis.
  6. measles.

1990 — The program is currently known as Universal child Immunisation, 1990.

Strategies —

- 100% coverage of expectant mothers with 2 doses of TT.

- At least 85% coverage of infants with 3 doses of DPT, OPV and one dose of each of BCG and measles by 2000.

- Although the target was 100% immunization of children. but agreed that when coverage reaches a figure of 80% or more

⊗ Vaccines that can be given after discussion with parents.

- Varicella - 15 months (or after 1 year).
- Hepatatis - A - High Risk selected infants. 18 months, 6 months later.
- Pneumococcal conjugate vaccine - 6 weeks.
- Influenza vaccine - 6 months of age to High risk selected infants annually.

National Immunization Schedule -

⊛ For Pregnant Women -

Vaccine	When to given	Dose	Route	Site.
TT-1	Early in pregnancy.	0.5 ml	IM	Upper Arm
TT-2	4 weeks after TT-1	0.5 ml	IM	Upper Arm
TT Booster	If received 2 TT doses in a pregnancy within the last 3 yrs.	0.5ml	IM	Upper Arm.

⊛ For children -

Vaccine	When to given	Dose	Route	Site.
DPT booster.	16 - 24 months	0.5ml	IM	Ant. lat. side of mid thigh
OPV booster	16 - 24 months	2 drops	oral	oral
Measles (2nd dose)	16 - 24 months	0.5 ml	S.C.	Right Upper Arm
Japanese Encephalitis	16-24 months with DPT/OPV booster.	0.5ml	S.C.	Left Upper Arm
Vit A (2nd - 9th Dose)	16 months with DPT/OPV booster	2ml (2lakh IU)	oral	oral
TT booster	5-6 years	0.5ml	IM	Upper Arm
	10 years and 16 years	0.5ml	IM	Upper Arm.

National Mental Health Programme

- Launched during 1982.

~~Aims~~ Principles - (objectives).

- To ensure availability of Mental Health care services for all, especially community at risk and underprivileged section of the population.
- To encourage application of mental Health knowledge in general health care and social development.
- To promote community participation in mental health services development.

Aims of NMHP -

1. Prevention and treatment of mental and neurological disorders and their associated disabilities.

2. Use of mental Health technology to improve general health services.

3. Application of mental health principles in total national development to improve quality of life.

The Programme strategies -

1. Integration of mental Health with primary health care through NMHP.

2. Provision of tertiary care institutions for treatment of mental disorders.

3. Eradicating stigmatization of mentally ill patients and protecting their rights through regulatory institutions like central, mental health Authority.

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(8) District mental Health programme components:

- Training programmes of all workers in the mental health team at the nodal institute.
- Public education in mental health to increase awareness and to reduce stigma.
- For early detection and treatment, the OPD and indoor services are provided.
- Providing valuable data and experience at the level of community to the state and centre for future planning.
- Improvement in services and research.

⑨ District mental health programme has now incorporated promotive and preventative activities for positive mental health which include:

1. school mental health services
2. college counselling services
3. Work place stress management
4. suicidal prevention services

National program for prevention and control of cancer, Diabetes, cardio-vascular diseases and stroke (NPCDCS).

- With huge growing burden of chronic non-communicable diseases (NCD's), particularly cardio-vascular Disease, diabetus mellitus, cancer, stroke, and chronic lung disease. India is going through rapid health revolution.
- 53% of deaths in 2005 were due to NCD's.

Aim -

- Focus on the health promotion.
- capacity building including human resource development
- early diagnosis and management of this disease.

objectives -

1. To prevent and control common NCDs through behavior and lifestyle changes.

2. To provide early diagnosis and management of common NCD's.

3. To build capacity at various levels of health care for prevention, diagnosis and treatment of common NCD's.

4. To train human resources within the public health setup; viz doctors, paramedics and nursing staff to cope up with increasing burden of NCD's.

5. To establish and develop capacity for palliative and rehabilitative care.

The various approach such as mass media, community education and interpersonal communication will be used for behavioral change using on the following message,

1. Increase intake of healthy foods.
2. Increased physical activity.
3. Avoidance of tobacco and alcohol.
4. Stress management.

(2) Cancer component under NPCDCS -

- cancer is an important public health problem in India. With nearly 10 lakh new cases occuring every year in the country.

Launched - 1975-76.

cases - 2.8 million.

objectives -

1. Primary Prevention of cancers by health education.
2. secondary prevention

i.e - early detection and diagnosis of common cancer such as cancer of cervix, mouth, breast and tobacco related cancer by screening or self examination method.

3. Tertiary Prevention -

- eg. strengthening of the existing institutions of comprehensive therapy including palliative care.

New schemes:-

1. Scheme for district project:-

- The scheme carrying out IEC (Information, Education and communication) activities.
- Early Detection and pain relief measures, by providing one time financial assistance of 15 lakhs to state Governments for each district project selected.

2. Development of oncology wings -

- The oncology department in medical colleges are provided financial support upto 1 crore for the purchase of cobalt therapy units, brachytherapy unit, linear accelerator and for the undertaking mammography.

3. Financial support to NGO's -

- Support up to 5 lakhs to voluntary organisation is provided on recommendation by the state Government for carrying out cancer education and detection activities, prefarably in rural area and urban slums
- support / Assistance was given to 33 NGO's.